



Memorandum

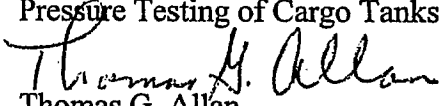
U.S. Department
of Transportation
**Research and
Special Programs
Administration**

Date: AUG 16 2001

Reply to Attn. of: Gorsky, x69532

Subject: Pressure Testing of Cargo Tanks

Ref. No. 01-0203

From: 
Thomas G. Allan
Senior Transportation Regulations Specialist
Office of Hazardous Materials Standards

To: William A. Quade
Chief of Hazardous Materials Division
Federal Motor Carrier Safety Administration

This responds to your e-mailed request for interpretation, dated August 1, 2001, asking for clarification of requirements for periodic pressure testing of cargo tanks under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask if the reference to an "upper coupler (fifth wheel) assembly" in paragraphs (d)(2)(viii) and (g)(1)(iii) of § 180.407 also includes a turntable, which is a method of permanently attaching a steering axle to the front of a full trailer.

The answer is yes. The turntable performs the same function as a fifth wheel, allowing the pivoting movement between the steering axle and the frame of the cargo tank. This movement causes stress to the cargo tank. Further, the turntable attachment does not allow easy visual inspection of the area of the cargo tank that is directly above the turntable. Therefore, in accordance with § 180.407(d)(2)(viii), as part of an external visual inspection, those elements of a turntable attachment that can be inspected without dismantling the turntable must be examined for corrosion or damage that might prevent safe operation. Additionally, in accordance with § 180.407(g)(1)(iii), as part of a pressure test, a turntable attachment must be removed from the cargo tank, and cargo tank areas covered by the turntable attachment must be inspected for corroded and abraded areas, dents, distortions, defects in welds, and any other condition that might render the cargo tank unsafe for transportation.

I hope this information is helpful. If you have further questions, please do not hesitate to contact this office.

#

Gorsky, Susan

From: Quade, William <FHWA> [William.Quade@fhwa.dot.gov]
Sent: Thursday, August 02, 2001 12:49 PM
To: Gorsky, Susan <RSPA>
Subject: Fwd: Removing upper couplers



ENCLOSURE

Susan,

Another CT q&a from our field staff. I agree with the proposed answer. Can you please issue an interpretation? This issue has been around for a while and we need it in writing to strengthen our efforts.

Thanks,
BQ

Gorsky
3180.487
Cargo Tanks
01-0203

Date: 07/30/2001 01:36 pm -0400 (Monday)
From: Albert Calkin
To: MORRISON, RICHARD.L; Quade, William
CC: Brewster, Janelle; KPHILLIPS; Shelton, Daniel; Tyner, Bill
Subject: Removing upper couplers

Las fall the question arose as to whether a turntable (method of the permanent attachment of a steering axle to the front of a full trailer) is considered an upper coupler which must be removed as part of a pressure test.

The e-mail returned from Danny Shelton stated he had talked to RSPA and since it performed the same function as a fifth wheel, it must be removed during the pressure test. We need to have something in writing regarding this issue, as during my review of Kersten Trailer Sales of WY, the owner stated he had no problem with removing the turntables, but he anticipated a great deal of resistance from the motor carriers. If we can't provide something in writing from RSPA, we will probably end up being challenged and it is better to head this off right now.

My suggested wording of a Q & A would be as follows:

Q. Does the reference to an "upper coupler (fifth Wheel) assembly" as listed in 180.407 (d)(2)(viii) and in 180.407(g)(1)(iii) also include a turntable, located above the steering axle of a full trailer?

A. Yes, the turntable performs the same function as a fifth wheel, allowing the pivoting movement between the axle and the frame of the cargo tank. This movement causes stress to the cargo tank and frequently does not allow for a sufficient visual inspection of the area, above the turntable, of the cargo tank.

If this is what we want RSPA to approve, please take this request forward as soon as possible.

Thanks,
ALC



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The answer is yes. The turntable performs the same function as a fifth wheel, allowing the pivoting movement between the steering axle and the frame of the cargo tank. This movement causes stress to the cargo tank. Further, the turntable attachment does not allow easy visual inspection of the area of the cargo tank that is directly above the turntable. Therefore, in accordance with § 180.407(d)(2)(viii), as part of an external visual inspection, those elements of a turntable attachment that can be inspected without dismantling the turntable must be examined for corrosion or damage that might prevent safe operation. Additionally, in accordance with § 180.407(g)(1)(iii), as part of a pressure test, a turntable attachment must be removed from the cargo tank, and cargo tank areas covered by the turntable attachment must be inspected for corroded and abraded areas, dents, distortions, defects in welds, and any other condition that might render the cargo tank unsafe for transportation.

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#

SGorsky:sg:x69532:8/9/01
FMCSA concurrence – 8/10/01
cc: DHM-10
01-0203



Letter From
Tom Allen
addressing
the issue.

Requester	William Quade	Date Received	8/2/2001
Company	FMCSA Hazardous Materials Division	Tracking Number	01-0203
Phone	202-366-6121	Revision Date	8/16/2001

Date Assigned	8/2/2001	Date of Letter	8/2/2001
Staff	Gorsky <input type="checkbox"/> DHM	First Draft Due	8/23/2001
Section	180.407	First Draft Date	
Subject	Cargo Tanks		
Concurrence		Days to Sign	14
Status		Status Date	
Sign/Close Date	08/16/2001	Signor	

HBP ☐ Copy to Docket ☐ Copy to DHM-60 ☐

Comment Draft to Tom Allan - 8/10/01



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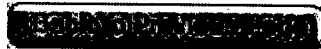
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Fifth Wheel Glossary of Terms

- | | | |
|------------------------------|---|--------------------------|
| ▼ A-Train | ▼ Fifth Wheel Top Plate | ▼ Rigid Fifth Wheel |
| ▼ Air Operated Lock Release | ▼ Frame Width | ▼ Roll Axis |
| ▼ Air Slide Release | ▼ Full Trailer | ▼ Roll Center |
| ▼ Articulating Upper Coupler | ▼ Fully Oscillating Fifth Wheel | ▼ Secondary Lock |
| ▼ Articulation | ▼ G.T.W. - Gross Trailer Weight of Gross Towed Weight | ▼ Semi-Oscillating |
| ▼ Axles, Numbering | ▼ General Over-The-Road Use | ▼ Semi-Trailer |
| ▼ B-Dolly Train | ▼ Inboard Angle Mount | ▼ Sliding Fifth Wheel |
| ▼ B-Train | ▼ Kingpin | ▼ Slide Travel |
| ▼ Bogie | ▼ Kompensator® Fifth Wheel | ▼ Stability |
| ▼ Bolster Plate | ▼ LowLube | ▼ Stationary Fifth Wheel |
| ▼ Bolster Plate Height | ▼ Manual Slide Release | ▼ Tilt Stop |
| ▼ c.g. | ▼ Mounting Bracket | ▼ TTMA |
| ▼ C-Train | ▼ No-Tilt Convertible Fifth Wheel | ▼ TVW |
| ▼ Center-of-Gravity (c.g.) | ▼ Off-Road | ▼ Torque & Twist |
| ▼ City Pick-up and Delivery | ▼ On-Road | ▼ Torsional Rigidity |
| ▼ Converter Dolly | ▼ Oscillation | ▼ Universal Fifth Wheel |
| ▼ Drawbar Capacity | ▼ Outboard Angle Mount | ▼ Upper Coupler |
| ▼ Electronic Lock Indicator | ▼ Over-the-Road | ▼ Vertical Load Capacity |
| ▼ Extra Capacity | ▼ Rated Capacity | |
| ▼ Fifth Wheel Height | | |

A-Train - A combination of two or more trailers in which the dolly (converter or turntable) is connected by a single pintle hook or coupler, and the drawbar connection is at the center between each vehicle. The resulting connection has two pivot points.

Air Operated Lock Release - The release mechanism for opening the lock mechanism of the fifth wheel. The driver sets the tractor parking brake to activate the system. The driver then pushes the air control valve to activate a pneumatic cylinder on the fifth wheel to open the locks.

Air Slide Release - The release mechanism for a sliding fifth wheel which is operated from the cab of a tractor by actuating an air control valve. When activated, the valve energizes an air cylinder, which releases the slide lock and permits re-positioning of the fifth wheel.

Articulating Upper Coupler - A bolster plate – kingpin arrangement that is not rigidly attached to the trailer, but provides articulation and/or oscillation (e.g. frameless dump) about an axis parallel to the rear axle of the trailer.

Articulation - Rotation about an axis. Generally referring to the fore/aft rotational movement between the fifth wheel and its mounting (See "[Oscillation](#)").

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Axles, Numbering - When used in this guide to select a fifth wheel, the number of axles (for example, "Up to 4-axle trains") refers to the total number of axles on the "towed vehicle(s)" or trailer(s). It does not include the axles on the towing vehicle.

B-Dolly Train - A combination of two or more trailers in which the dolly (converter or turntable) is connected by two or more pintle hooks, couplers and drawbar connections located between each vehicle, thus making a rigid connection. The resulting connection has one pivot point.

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B-Train - A combination of two or more trailers in which the rear semi-trailer(s) is connected with a single pivot point, commonly a fifth wheel, mounted on an extension of the frame of the lead trailer.

Bogie - The axle spring, suspension arrangement on the rear of a tandem axle tractor.

Bolster Plate - The flat, load-bearing surface under the front of a semi-trailer, including the kingpin, which rests firmly upon the fifth wheel when coupled. The bolster plate is sometimes referred to as an upper coupler.

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Bolster Plate Height - The height from the ground to the bolster plate when the trailer is level and unladen.

c.g. - Abbreviation for center-of-gravity. Used in this guide to mean the center-of-gravity of the loaded trailer.

C-Train - A combination of two or more trailers in which the dolly (converter or turntable) is connected to the trailer by means of two pintle hook or coupler-drawbar connections. The resulting connection has one pivot point.

(See also "[B-Dolly Train](#)")

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Center-of-Gravity (c.g.) - That point in a vehicle or body where the total weight or mass could be considered to be concentrated. Used in conjunction with vehicle stability and weight distribution on its axles.

City Pick-up and Delivery - Pick-up and delivery service within cities and/or suburban areas with typical distance between starts and stops of 3 miles or less.

Converter Dolly - An axle, frame, drawbar and fifth wheel arrangement that converts a semi-trailer into a full trailer.

Drawbar Capacity - The maximum, horizontal pulling force that can be safely applied to a coupling device.

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Electronic Lock Indicator (ELI®) - Electronic monitoring and data collection system that monitors the coupling process from inside the cab. Magnetic proximity sensors located on the fifth wheel top plate sense fifth wheel and kingpin locking sequence, relaying the data to the driver through an icon based display in the cab.

Extra Capacity - Generally refers to a coupling device which has strength capability greater than standard.

Fifth Wheel Height - The distance from the ground to the top of the fifth wheel when it is level and parallel with the ground. It can also refer to the height from the tractor frame to the top of the fifth wheel. The latter definition applies to data given in fifth wheel literature.

Fifth Wheel Top Plate - The portion of the fifth wheel assembly that contacts the trailer bolster plate and houses the locking mechanism that connects to the kingpin.

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Frame Width - The measurement across the outside of the frame rails of a tractor, truck or trailer.

Full Trailer - A trailer which does not transfer load to the towing vehicle. It employs a towbar coupled to a swiveling or steerable running gear assembly at the front of the trailer.

Fully Oscillating Fifth Wheel - Generally refers to a fifth wheel type with fore/aft and side-to-side articulation. (See "[Oscillation](#)")

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G.T.W. - Gross Trailer Weight of Gross Towed Weight - The sum of the weight of an empty trailer(s) and its payload.

General Over-The-Road Use - When used in this guide means, a fifth wheel that is designed for multiple standard duty highway applications.

Inboard Angle Mount - The horizontal leg of the mounting angle sits on the tractor frame.

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Kingpin - The pin mounted through the center of the trailer upper coupler (bolster plate) that mates with the fifth wheel locks securing the trailer to the fifth wheel. The configuration is controlled by industry standards. See SAE J700 and SAE J848.

Kompensator® Fifth Wheel - A fifth wheel designed to relieve some of the torque and twist that is generated by some trailer designs, thereby reducing or eliminating trailer frame cracks. Tractor tandem tire life is also greatly increased due to improved traction. The primary application for this fifth wheel is for tankers in which the c.g. does not exceed 44 inches above the top surface of the fifth wheel.

LowLube - A fifth wheel with recesses cast into the top plate into which lube free inserts are attached to eliminate the use of top plate grease. Also includes lube free inserts between top plate and brackets to eliminate lubrication and a grease fitting which permits periodic greasing of the locks.

Manual Slide Release - The release mechanism for a sliding fifth wheel which is operated by hand.

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Mounting Bracket - That portion of the fifth wheel assembly that connects the fifth wheel top plate to the tractor frame or fifth wheel mounting system.

No-Tilt Convertible Fifth Wheel - A fifth wheel that has fore/aft articulation which can be locked out to produce a rigid top plate for applications that have either rigid and/or articulating upper couplers.

Off-Road - Refers to the terrain on which a tractor-trailer will operate which is unpaved and rough, or ungraded. Any terrain not considered part of the public highway system falls under this heading.

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On-Road - Refers to the terrain on which a tractor-trailer will operate which is paved or a smooth graded surface, generally considered to be part of the public highway system.

Oscillation - Rotational movement in either fore/aft or side-to-side direction about a pivot point. Generally refers to fifth wheel designs in which fore/aft and side-to-side articulation are provided.

Outboard Angle Mount - The horizontal leg of the mounting angle faces outward.

Over-the-Road - Used interchangeably with on-road. See "On-Road" above.

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Rated Capacity - The maximum, recommended safe load that can be sustained by a component or assembly without permanent damage.

Rigid Fifth Wheel - A fifth wheel that is fixed rigidly to a frame. This fifth wheel has no articulation or oscillation. Generally used in applications where the articulation is provided by other means, e.g., an articulating upper coupler of a frameless dump.

Roll Axis - The theoretical line that joins the roll center of the front and rear axles.

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Roll Center - The instant (always changing) center about which the vehicle sprung mass rotates when lateral (rollover) forces are applied. Generally this is located at the fore/aft center of the suspension at a height where the springs attach to the frame links.

Secondary Lock - Refers to a component or components of a fifth wheel locking mechanism that may be included as a back-up system for the primary locks. The secondary lock is not required for the fifth wheel to function and can be either manually or automatically applied. On some designs, the engagement of the secondary lock can only be accomplished if the primary lock is properly engaged.

Semi-Oscillating - Generally refers to a fifth wheel type which oscillates or articulates about an axis perpendicular to the vehicle centerline.

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Semi-Trailer - A load carrying vehicle equipped with one or more axles and constructed so that its front end is supported on the fifth wheel of the truck tractor which pulls it.

Sliding Fifth Wheel - A specialized fifth wheel design which incorporates provisions to readily relocate the kingpin center forward and rearward affecting the weight distribution on the tractor axles and/or overall length of the tractor and trailer.

Slide Travel - The distance that a sliding fifth wheel is designed to move.

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Stability - A relative measure of the handling characteristics which provide the desired and safe operation of the vehicle during various maneuvers.

Stationary Fifth Wheel - A fifth wheel whose location on the tractor frame is fixed once it is installed.

Tilt Stop - A block or formed plate welded to a fifth wheel mounting bracket that limits the rearward articulation of the fifth wheel. Tilt stops are often used to keep the fifth wheel from resting on or damaging the tractor frame rails.

TTMA - Truck Trailer Manufacturers Association
1020 Princess Street, Alexandria, VA 22314-2247
Phone: (703) 549-3010 Fax: (703) 549-3014

▲ [TOP](#)

tvw (Towed Vehicle Weight) - Total weight of towed vehicles.

Torque & Twist - Generally refers to the forces developed in the trailer and/or tractor frame that are transmitted through the fifth wheel when a rigid trailer (e.g. a tanker) is required to negotiate bumps (i.e. street curbs, etc.).

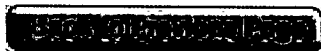
Torsional Rigidity - A component's ability to remain rigid when subjected to twisting forces.

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Universal Fifth Wheel - See "[Fully Oscillating Fifth Wheel](#)"

Upper Coupler - See "[Bolster Plate](#)"

Vertical Load Capacity - The maximum, recommended vertical force (down) than can be safely applied to a coupling device.

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Federal Register

Wednesday
April 5, 1995

Part III

Department of Transportation

Research and Special Programs
Administration

49 CFR Parts 173, 178, and 180
Cargo Tanks; Miscellaneous
Requirements; Revisions and Response
to Petitions for Reconsideration; Final
Rule

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 173, 178 and 180

[Docket No. HM-183C; Amdt. Nos. 173-240, 178-105 and 180-7]

RIN 2137-AC37

Cargo Tanks; Miscellaneous Requirements; Revisions and Response to Petitions for Reconsideration

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Final rule; response to petitions for reconsideration.

SUMMARY: This document amends a final rule published on November 3, 1994, and concerns manufacture, qualification, and maintenance of DOT specification cargo tank motor vehicles. In response to petitions for reconsideration, RSPA is revising design loading requirements for MC 331 cargo tank motor vehicles and making other minor editorial and technical changes for clarity. The changes made in this document are intended to ease certain regulatory requirements where there will be no adverse effect on safety.

DATES: Effective: May 22, 1995.

Compliance date: Compliance with the regulations, as amended herein, is authorized as of April 5, 1995.

FOR FURTHER INFORMATION CONTACT: Ronald Kirkpatrick, telephone (202) 366-4545, Office of Hazardous Materials Technology, or Jennifer Karim, (202) 366-4488, Office of Hazardous Materials Standards, Research and Special Programs Administration, U.S. Department of Transportation, Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION: On November 3, 1994, RSPA published in the *Federal Register* a final rule, under Docket No. HM-183C (59 FR 55162), amending certain requirements for the manufacture, qualification and maintenance of cargo tank motor vehicles. Changes were made to relax the requirements for structural integrity, accident damage protection, welding and design quality control procedures, and pressure relief based on comments from industry. Changes were also made to require facilities repairing cargo tanks stamped as meeting the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) to have a Certificate of Authorization for use of an "R" stamp from the National Board of Boiler and Pressure Vessel Inspectors (National Board) Code.

RSPA received five petitions for reconsideration of certain aspects of the final rule. These petitions were submitted by the Cargo Tank Manufacturers Association (CTMA), Cargo Tank Concepts, Ltd. (CTCL), Truck Trailer Manufacturers Association (TTMA), National Propane Gas Association (NPGA), and the Compressed Gas Association, Inc. (CGA).

CTMA opposed several provisions adopted in the final rule. First, CTMA petitioned RSPA to reconsider its position on how the design stress calculations, in 49 CFR 178.345-3(c), should be applied to cargo tank loading conditions. Except for the loadings prescribed in paragraph (c)(i), CTMA stated:

[T]he loads are extreme loads that will be experienced rarely if at all during the life of a cargo tank and [the] ASME Code allowable stresses should be based on the stress increase allowed for wind and seismic loads which are also experienced rarely if at all in the life of stationary vessels. Per UG-23 of the ASME Code, this increase is 20 percent. CTMA believes that the loads specified in building codes [are] applicable to pressure vessels in the same manner. Using ASME allowable stresses for these load conditions is too conservative since margins of safety are pyramided if rarely occurring extreme loads cannot be resisted by emergency stresses as recommended by CTMA.

As noted by RSPA in the preamble to the final rule (59 FR 55165), discussions have been ongoing for a number of years on how to combine the loadings in calculating the structural integrity requirements. The concept of separating structural loadings into two categories, *normal operating loading* and *extreme dynamic loading*, was proposed by several cargo tank motor vehicle designers at a public meeting in February 1994 and more fully developed later. In *normal* operations, a cargo tank can be expected to routinely experience relatively low dynamic forces; these forces are to be considered to occur simultaneously. Under *extreme dynamic* loadings, the cargo tank experiences relatively high forces which occur rarely, if at all, during the life of a cargo tank; these forces are considered to act independently, one at a time. This approach has received wide acceptance and is the foundation for new recommended practices under development by a TTMA engineering committee.

RSPA does not believe the calculations for "stress increase" referred to by CTMA necessarily apply to dynamic loads experienced either in normal operations or in extreme loading conditions experienced by cargo tank

motor vehicles. Two provisions for increased allowable stresses are prescribed in the ASME Code, Section VIII, Division 1, UG-23. In paragraph (c) of UG-23, a factor of 1.5 is discussed for "combined maximum primary membrane stress plus primary bending stress across the thickness." Evidently, the 20 percent factor referred to by CTMA is associated with the factor discussed in paragraph (d) for the "combination of earthquake loading, or wind loading with other loadings in UG-22," with the stipulation that earthquake and wind loadings need not be considered to act simultaneously. RSPA believes the many years of experience accumulated by cargo tank motor vehicle manufacturers support the approach adopted in the final rule. The reference in the CTMA petition to other "loads specified in building codes" may or may not pertain to this matter. CTMA did not identify those codes and provided no information on whether or how they have any application to cargo tank structural integrity or accident damage protection. Therefore, CTMA's request is denied.

Second, CTMA opposed the 2 "g" design load for rollover damage protection devices specified in § 178.345-8(c)(1). CTMA stated that the loads on rollover devices, in the case of longitudinal sliding, would be limited by the coefficient of sliding friction of the metal rollover devices on the ground or pavement and, in the case of lateral rollover, would be limited even further by the lateral force leading to continued overturn of the tank. RSPA discussed commenters' requests to reduce the 2 "g" design load for rollover protection at length in the preamble of the final rule (59 FR 55166). RSPA recognizes that new designs may be necessary to gain significant benefits in safety.

RSPA also recognizes that the amount of force currently imposed in the horizontal plane is a simplification of many potential variables which can come into play during an overturn accident. Many scenarios are possible: the impact surface may be smooth or rough, horizontal or sloping, as hard as concrete or as soft as sand or damp earth; the vehicle may roll over an obstacle such as a guard rail; the cargo tank may receive an impact over its entire length or on only a small part of its exposed surface; etc. CTMA's comments on use of the coefficient of sliding friction might be appropriate for overturn on a smooth, hard highway surface, but would impose relatively moderate loads in comparison to other rollover scenarios. Accident scenarios where the rollover damage protection devices plow through earth or strike

roadside obstacles impose much greater loadings on the devices. Therefore, CTMA's petition for a reduction in the safety performance of rollover damage protection is denied.

Third, CTMA repeated its position that it is difficult to design rear-end protection devices in compliance with the loads prescribed in § 178.345-8(d), particularly devices which are offset from the load path. CTMA repeated its belief previously expressed in comments that the intent of the regulation is for the loads to be transmitted to the tank structure and absorbed without exceeding the permitted stresses anywhere along the load path. CTMA offered no new information to support this position. The revised requirements were discussed in the preamble of the final rule (59 FR 55167). RSPA believes that the revised requirements for the DOT 400-series cargo tanks allow engineers more freedom in the design of rear-end protection, including approaches involving energy dissipation and dampening. Therefore, CTMA's petition is denied.

Finally, CTMA commented on the suitability of applying ASME Code standards to the cargo tank industry while not recognizing other "alternative quality control program(s)." This issue was fully discussed in the preamble of the final rule (59 FR 55162). In addition, this subject was addressed in previous notices and public meetings under Docket HM-183 extending over a period of nearly ten years. CTMA provided no additional data or information to support changing the final rule. Therefore, RSPA's position remains unchanged and requirements for using procedures established under the ASME Code and the National Board of Boiler and Pressure Vessel Inspectors (National Board) Code are retained, and CTMA's petition is denied.

CTCL petitioned RSPA to reconsider amendments allowing a small release of certain types of ladings from the pressure relief system, in overturn accidents, before reclosing to a leak-tight position. CTCL stated that it has designed a vent which releases vapors instead of lading in an overturn accident situation, and that this information was not presented RSPA earlier because the technology had not yet been developed. RSPA welcomes the development by industry of improved valve designs. RSPA solicited information during the HM-183C rulemaking proceeding on the existence of reclosing pressure relief devices capable of reseating with no loss of lading and not subject to clogging and sticking during field service. However, RSPA believes CTCL has not provided

sufficient information to support excluding the use of other valve designs at this time, and CTCL's petition is denied.

TTMA petitioned RSPA to continue allowing a cargo tank manufacturer holding an ASME "U" stamp to make repairs to ASME stamped cargo tanks. TTMA stated that an ASME "U" stamp holder should not be required to obtain an "R" stamp from the National Board and there is no reason why the National Board cannot continue to inspect repairs made by a "U" stamp holder. Furthermore, the National Board Inspection Code allows repairs to be made on ASME stamped cargo tanks by a facility holding an "R" stamp or by a facility working within an individual governmental jurisdiction where that jurisdiction has issued authorization for the facility to perform repairs.

RSPA explained in the preambles of the notice of proposed rulemaking (March 3, 1993; 58 FR 12316) and the final rule (59 FR 55170) that the National Board has control over the quality of work performed by an "R" stamp holder. Jurisdictional authorization is recognized only within the governmental boundaries where the repair facility is located. This type of authorization may be appropriate for work performed on stationary vessels, but not for mobile systems such as cargo tank motor vehicles. RSPA believes it is essential to apply a nationally recognized consensus standard in a uniform manner regardless of jurisdiction. Therefore, the requirement that repairs on DOT specification cargo tanks certified to the ASME Code must be performed only by a facility holding a valid "R" stamp is retained and TTMA's petition is denied.

CGA petitioned RSPA to remove the word "internal" in the first sentence in § 178.338-11(c) specifying that each filling and discharge line for liquids must be provided with a remotely controlled internal self-closing stop valve. CGA pointed out that the word "internal" did not appear in the provision in the notice of proposed rulemaking and that requiring internal valves would bring the cryogenic flammable lading industry to a standstill because of the inner tank/outer jacket configuration of these cargo tanks. RSPA agrees. It was not RSPA's intent to require an "internal" self-closing valve on these tanks, but to broaden the requirement to include all flammable ladings. Therefore, the word "internal" is removed.

NPGA asked RSPA to reconsider its decision in the final rule that a future rulemaking would address design loading requirements for MC 331

specification cargo tanks. The preamble to the final rule (59 FR 55163) noted NPGA's recommendation for uniformity in design loading requirements for all DOT specification cargo tanks. In its petitions, NPGA asked RSPA to extend, until March 1, 1997, the compliance date for construction of MC 331 cargo tank motor vehicles conforming to the structural integrity requirements contained in § 178.337-3. It also urged RSPA to make resolution of stress analysis a priority project.

RSPA has reviewed the report previously submitted by NPGA and found that NPGA's proposed loadings for the MC 331 cargo tank are very similar to the loadings adopted for the DOT 400-series cargo tanks. This supports NPGA's position that cargo tank motor vehicles encounter similar loadings regardless of whether the cargo tank is used to transport a liquid or gas lading. Therefore, for greater consistency, RSPA is amending the structural integrity requirements in § 178.337-3 by adopting the same loadings as specified for the DOT 400-series cargo tank specifications. In view of this change, a new paragraph (f) is added in § 178.23 to provide for a MC 331 specification cargo tank conforming to the structural integrity requirements contained in § 178.337-3 or to the corresponding requirements in effect at the time of manufacture. However, the material thickness may not be less than that required by the ASME Code.

Based on comments received from CGA that design loadings specified for MC 338 cargo tanks should not be revised for consistency with the MC 331 specification, RSPA is not making any change to § 178.338-3. CGA has advised it is developing a document to provide additional guidance to its members on the design and construction of MC 338 cargo tanks.

The amendment to § 178.337-3 eliminates any need for a delay in the compliance date for construction of MC 331 cargo tank motor vehicles conforming to the structural integrity requirements, and this part of NPGA's petition is denied.

Additionally, CGA petitioned RSPA to allow modifications on cryogenic cargo tanks originally authorized by exemption prior to introduction of the MC 338 specification. In accordance with § 180.405(d), such cargo tanks must be marked "DOT MC 338-E" followed by the exemption number. CGA contends that modifications such as adding a manhole may require removal of the outer jacket and installation of a new shell course to the inner vessel; only local reinforcement of the inner vessel was required

previously. After further consideration, RSPA agrees with CGA. In establishing the MC 338 specification, the final rule (June 16, 1983; 48 FR 27674) stated "[T]his grandfathering of existing tanks is necessary to avoid potential severe economic consequences to some exemption holders and can be justified from a safety point of view because of the thorough technical review involved in the exemption process, notwithstanding the fact that certain aspects of certain exemptions may differ from this final rule." Nothing in subsequent rulemakings has changed this premise. Therefore, in this final rule, in § 180.413, in paragraph (d)(3), the introductory text is revised, and a new paragraph (v) is added to allow MC 338 cargo tanks authorized under § 180.405(d) to be structurally modified provided that no reduction in structural integrity is incurred and that any modification is in accordance with the ASME Code or with the MC 338 specification.

Finally, RSPA has made the following editorial revisions for clarity: In § 178.345-3, in paragraphs (c)(1)(iii)(B) and (c)(2)(iii)(B), in the second sentence, the wording "horizontal pivot of the tractor" is revised to read "horizontal pivot of the truck tractor". In § 178.345-14, in paragraph (b)(3), the wording "Tank MAWP" is revised to read "Tank maximum allowable working pressure (MAWP)". In § 180.403, a sentence is added to the definition of modification. In § 180.405, in paragraph (h)(2), reference to 40 CFR 60.601 is deleted. In § 180.407, in the table in paragraph (c), under the subheading "Thickness Test" in the first column, the wording "in corrosive service, except" is revised to read "transporting lading corrosive to the tank, except"; and paragraphs (d)(1)(i) and (ii) are revised to remove duplicative language. In § 180.413, paragraphs (b)(6) and (d)(10) are revised to clarify that a repair or modification affecting the structural integrity of a pressure cargo tank, with respect to pressure, must be determined by testing required by the specification or by § 180.407(g)(1)(iv).

Rulemaking Analyses and Notices

1. Executive Order 12866 and DOT Regulatory Policies and Procedures

This final rule is not considered a significant regulatory action under section 3(f) of Executive Order 12866 and was not reviewed by the Office of Management and Budget. The rule is not considered significant under the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034). This amendment imposes no

new requirements on affected persons. The final regulatory evaluation for the November 1994 final rule is available for review in the docket. Changes in this final rule did not warrant revision of the regulatory evaluation.

2. Executive Order 12612

This final rule has been analyzed in accordance with the principles and criteria contained in Executive Order 12612 ("Federalism"). Federal law expressly preempts State, local, and Indian tribe requirements applicable to the transportation of hazardous material that cover certain subjects and are not "substantively the same" as the Federal requirements. 49 U.S.C. 5125(b)(1). These covered subjects are:

(A) The designation, description, and classification of hazardous material;

(B) The packing, repacking, handling, labeling, marking, and placarding of hazardous material;

(C) The preparation, execution, and use of shipping documents related to hazardous material and requirements respecting the number, contents, and placement of those documents;

(D) The written notification, recording, and reporting of the unintentional release in transportation of hazardous material; or

(E) The design, manufacturing, fabricating, marking, maintenance, reconditioning, repairing, or testing of a packaging or a container which is represented, marked, certified, or sold as qualified for use in transporting hazardous material.

This final rule addresses the design, manufacturing, and certain other requirements for packages represented as qualified for use in the transportation of hazardous material. Therefore, this final rule preempts State, local, or Indian tribe requirements that are not "substantively the same" as Federal requirements on these subjects. Section 5125(b)(2) of Title 49 U.S.C. provides that when DOT issues a regulation concerning any of the covered subjects after November 16, 1990, DOT must determine and publish in the Federal Register the effective date of Federal preemption. The effective date may not be earlier than the 90th day following the date of issuance of the final rule and no later than two years after the date of issuance. RSPA has determined that the effective date of Federal preemption of this final rule will be July 5, 1995.

Because RSPA lacks discretion in this area, preparation of a federalism assessment is not warranted.

3. Regulatory Flexibility Act

I certify that this final rule will not have a significant economic impact on

a substantial number of small entities. This rule applies to manufacturers, shippers, carriers, and owners of cargo tanks, some of which are small entities. There are no direct or indirect adverse economic impacts for small units of government, businesses, or other organizations.

4. Paperwork Reduction Act

This amendment imposes no changes to the information collection and recordkeeping requirements contained in the June 12, 1989 final rule, which were approved by the Office of Management and Budget (OMB) under the provisions of 44 U.S.C. chapter 35 and assigned control number 2137-0014.

5. Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

List of Subjects

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 178

Hazardous materials transportation, Motor vehicles safety, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 180

Hazardous materials transportation, Motor carriers, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

In consideration of the foregoing, title 49, chapter I of the Code of Federal Regulations, is amended as set forth below:

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

1. The authority citation for part 173 continues to read as follows:

Authority: 49 U.S.C. 5101-5127, 49 CFR 1.53.

2. In § 173.23, a new paragraph (f) is added to read as follows:

§ 173.23 Previously authorized packaging.
* * * * *

(f) An MC 331 cargo tank motor vehicle must conform to structural integrity requirements in § 178.337-3 or to corresponding requirements in effect at the time of manufacture.

PART 178—SPECIFICATIONS FOR PACKAGINGS

3. The authority citation for part 178 continues to read as follows:

Authority: 49 U.S.C. 5101-5127, 49 CFR 1.53.

4. In § 178.337-3, paragraph (c) is revised to read as follows:

§ 178.337-3 Structural integrity.

* * * * *

(c) *Shell design.* Shell stresses resulting from static or dynamic loadings, or combinations thereof, are not uniform throughout the cargo tank motor vehicle. The vertical, longitudinal, and lateral normal operating loadings can occur simultaneously and must be combined. The vertical, longitudinal and lateral extreme dynamic loadings occur separately and need not be combined.

(1) *Normal operating loadings.* The following procedure addresses stress in the tank shell resulting from normal operating loadings. The effective stress (the maximum principal stress at any point) must be determined by the following formula:

$$S = 0.5(S_y + S_x) \pm [0.25(S_y - S_x)^2 + S_z^2]^{0.5}$$

Where:

- (i) S = effective stress at any given point under the combination of static and normal operating loadings that can occur at the same time, in psi.
- (ii) S_y = circumferential stress generated by the MAWP and external pressure, when applicable, plus static head, in psi.
- (iii) S_x = The following net longitudinal stress generated by the following static and normal operating loading conditions, in psi:

(A) The longitudinal stresses resulting from the MAWP and external pressure, when applicable, plus static head, in combination with the bending stress generated by the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall;

(B) The tensile or compressive stress resulting from normal operating longitudinal acceleration or deceleration. In each case, the forces applied must be 0.35 times the vertical reaction at the suspension assembly, applied at the road surface, and as transmitted to the cargo tank wall through the suspension assembly of a

trailer during deceleration; or the horizontal pivot of the truck tractor or converter dolly fifth wheel, or the drawbar hinge on the fixed dolly during acceleration; or anchoring and support members of a truck during acceleration and deceleration, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall. The following loadings must be included:

- (1) The axial load generated by a decelerative force;
- (2) The bending moment generated by a decelerative force;
- (3) The axial load generated by an accelerative force; and
- (4) The bending moment generated by an accelerative force; and
- (C) The tensile or compressive stress generated by the bending moment resulting from normal operating vertical accelerative force equal to 0.35 times the vertical reaction at the suspension assembly of a trailer; or the horizontal pivot of the upper coupler (fifth wheel) or turntable; or anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall.
- (iv) S_z = The following shear stresses generated by the following static and normal operating loading conditions, in psi:

(A) The static shear stress resulting from the vertical reaction at the suspension assembly of a trailer, and the horizontal pivot of the upper coupler (fifth wheel) or turntable; or anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall;

(B) The vertical shear stress generated by a normal operating accelerative force equal to 0.35 times the vertical reaction at the suspension assembly of a trailer; or the horizontal pivot of the upper coupler (fifth wheel) or turntable; or anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall;

(C) The lateral shear stress generated by a normal operating lateral accelerative force equal to 0.2 times the vertical reaction at each suspension

assembly of a trailer, applied at the road surface, and as transmitted to the cargo tank wall through the suspension assembly of a trailer, and the horizontal pivot of the upper coupler (fifth wheel) or turntable; or anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall; and

(D) The torsional shear stress generated by the same lateral forces as described in paragraph (c)(1)(iv)(C) of this section.

(2) *Extreme dynamic loadings.* The following procedure addresses stress in the tank shell resulting from extreme dynamic loadings. The effective stress (the maximum principal stress at any point) must be determined by the following formula:

$$S = 0.5(S_y + S_x) \pm [0.25(S_y - S_x)^2 + S_z^2]^{0.5}$$

Where:

- (i) S = effective stress at any given point under a combination of static and extreme dynamic loadings that can occur at the same time, in psi.
- (ii) S_y = circumferential stress generated by MAWP and external pressure, when applicable, plus static head, in psi.
- (iii) S_x = the following net longitudinal stress generated by the following static and extreme dynamic loading conditions, in psi:

(A) The longitudinal stresses resulting from the MAWP and external pressure, when applicable, plus static head, in combination with the bending stress generated by the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the tank wall;

(B) The tensile or compressive stress resulting from extreme longitudinal acceleration or deceleration. In each case the forces applied must be 0.7 times the vertical reaction at the suspension assembly, applied at the road surface, and as transmitted to the cargo tank wall through the suspension assembly of a trailer during deceleration; or the horizontal pivot of the truck tractor or converter dolly fifth wheel, or the drawbar hinge on the fixed dolly during acceleration; or the anchoring and support members of a truck during acceleration and deceleration, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall. The following loadings must be included:

(1) The axial load generated by a decelerative force;

(2) The bending moment generated by a decelerative force;

(3) The axial load generated by an accelerative force; and

(4) The bending moment generated by an accelerative force; and

(C) The tensile or compressive stress generated by the bending moment resulting from an extreme vertical accelerative force equal to 0.7 times the vertical reaction at the suspension assembly of a trailer, and the horizontal pivot of the upper coupler (fifth wheel) or turntable; or the anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall.

(iv) S_s = The following shear stresses generated by static and extreme dynamic loading conditions, in psi:

(A) The static shear stress resulting from the vertical reaction at the suspension assembly of a trailer, and the horizontal pivot of the upper coupler (fifth wheel) or turntable; or anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall;

(B) The vertical shear stress generated by an extreme vertical accelerative force equal to 0.7 times the vertical reaction at the suspension assembly of a trailer, and the horizontal pivot of the upper coupler (fifth wheel) or turntable; or anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall;

(C) The lateral shear stress generated by an extreme lateral accelerative force equal to 0.4 times the vertical reaction at the suspension assembly of a trailer, applied at the road surface, and as transmitted to the cargo tank wall through the suspension assembly of a trailer, and the horizontal pivot of the upper coupler (fifth wheel) or turntable; or anchoring and support members of a truck, as applicable. The vertical reaction must be calculated based on the static weight of the fully loaded cargo tank, all structural elements, equipment and appurtenances supported by the cargo tank wall; and

(D) The torsional shear stress generated by the same lateral forces as

described in paragraph (c)(2)(iv)(C) of this section.

* * * * *

§ 178.338–11 [Amended]

5. In § 178.338–11, in paragraph (c) introductory text, in the first sentence, the wording "remotely controlled internal self-closing stop valve" is revised to read "remotely controlled self-closing shut-off valve".

§ 178.345–3 [Amended]

6. In § 178.345–3, in paragraphs (c)(1)(iii)(B) and (c)(2)(iii)(B), in the second sentence, the wording "horizontal pivot of the tractor" is revised to read "horizontal pivot of the truck tractor".

§ 178.345–14 [Amended]

7. In § 178.345–14, in paragraph (b)(3), the wording "Tank (MAWP)" is revised to read "Tank maximum allowable working pressure (MAWP)".

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

8. The authority citation for part 180 continues to read as follows:

Authority: 49 U.S.C. 5101–5127, 49 CFR 1.53.

9. In § 180.403, the introductory text in the definition for "modification" is revised to read as follows:

§ 180.403 Definitions.

* * * * *

Modification means any change to the original design and construction of a cargo tank or a cargo tank motor vehicle which affects its structural integrity or lading retention capability. Any modification which involves welding on the cargo tank wall also must meet all requirements for "Repair" as defined in this section. * * *

* * * * *

§ 180.405 [Amended]

10. In § 180.407, in paragraph (h)(2), in the second sentence, the reference "40 CFR 60.501 and 60.601" is revised to read "40 CFR 60.501".

11. In § 180.407, paragraphs (d)(1)(i) and (ii) are revised to read as follows:

§ 180.407 Requirements for test and inspection of specification cargo tanks.

* * * * *

(d) * * *

(1) * * *

(i) Visual inspection is precluded by internal lining or coating, or

(ii) The cargo tank is not equipped with a manhole or inspection opening.

* * * * *

§ 180.407 [Amended]

11a. In addition, in § 180.407, in the table in paragraph (c), under the subheading "Thickness Test" in the first column, the wording "in corrosive service, except" is revised to read "transporting material corrosive to the tank, except".

12. In § 180.413, paragraphs (b)(6), ((d)(3) introductory text and (d)(10) are revised, and a new paragraph (d)(3)(v) is added to read as follows:

§ 180.413 Repair, modification, stretching, or rebarrelling of cargo tanks.

* * * * *

(b) * * *

(6) The suitability of any repair affecting the structural integrity of the cargo tank must be determined by the testing required either in the applicable manufacturing specification, or in § 180.407(g)(1)(iv).

* * * * *

(d) * * *

(3) Except as provided in paragraph (d)(3)(v) in this section, all new material and equipment, and equipment affected by modification, stretching or rebarrelling must meet the requirements of the specification in effect at the time such work is performed, and must meet the applicable structural integrity requirements (§§ 178.337–3, 178.338–3, or 178.345–3 of this subchapter). The work must conform to the requirements of the applicable specification as follows:

* * * * *

(v) For Specification MC 338 cargo tanks, the provisions of specification MC 338. However, structural modifications to MC 338 cargo tanks authorized under § 180.405(d) may conform to applicable provisions of the ASME Code instead of specification MC 338, provided the structural integrity of the modified cargo tank is at least equivalent to that of the original cargo tank.

* * * * *

(10) The suitability of any modification affecting the structural integrity of the cargo tank, with respect to pressure, must be determined by the testing required either in the applicable manufacturing specification, or in § 180.407(g)(1)(iv).

* * * * *

§ 180.413 [Amended]

13. In addition, in § 180.413, the following changes are made:

a. In paragraph (d)(3)(iii), at the end of the paragraph, the word "and" is removed.

b. In paragraph (d)(3)(iv), at the end of the paragraph, the period is removed and "; and" is added in its place.

Issued in Washington, DC on March 30,
1995, under authority delegated in 49 CFR
Part 1.

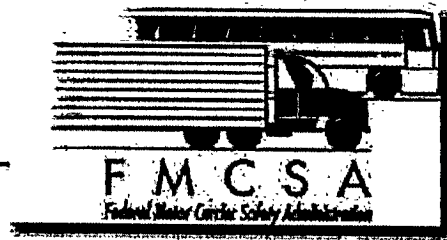
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*Deputy Administrator, Research and Special
Programs Administration.*

[FR Doc. 95-8349 Filed 4-4-95; 8:45 am]

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Regulations

§393.5 Definitions.

As used in this part, the following words and terms are construed to mean:

Agricultural Commodity Trailer. A trailer that is designed to transport bulk agricultural commodities in off road harvesting sites and to a processing plant or storage location, as evidenced by skeletal construction that accommodates harvest containers, a maximum length of 28 feet, and an arrangement of air control lines and reservoirs that minimizes damage in field operations.

Antilock Brake System or ABS means a portion of a service brake system that automatically controls the degree of rotational wheel slip during braking by:

- (1) Sensing the rate of angular rotation of the wheels;
- (2) Transmitting signals regarding the rate of wheel angular rotation to one or more controlling devices which interpret those signals and generate responsive controlling output signals; and
- (3) Transmitting those controlling signals to one or more modulators which adjust brake actuating forces in response to those signals.

Brake. An energy conversion mechanism used to stop, or hold a vehicle stationary.

Brake tubing/hose. Metallic brake tubing, nonmetallic brake tubing and brake hose are conduits or lines used in a brake system to transmit or contain the medium (fluid or vacuum) used to apply the motor vehicle's brakes.

Bus. A vehicle designed to carry more than 15 passengers, including the driver.

Chassis. The load supporting frame in a truck or trailer, exclusive of any appurtenances which might be added to accommodate cargo.

Clearance Lamp. A lamp used on the front and the rear of a motor vehicle to indicate its overall width and height.

Container Chassis. A semitrailer of skeleton construction limited to a bottom frame, one or more axles, specially built and fitted with locking devices for the transport of cargo containers, so that when the chassis and container are assembled, the units serve the same function as an over the road trailer.

Converter dolly. A motor vehicle consisting of a chassis equipped with one or more axles, a fifth wheel and/or equivalent mechanism, and drawbar, the attachment of which converts a semitrailer to a full trailer.

Curb Weight. The weight of a motor vehicle with standard equipment, maximum capacity of fuel, oil, and coolant; and, if so equipped, air conditioning and additional weight of optional engine. Curb weight does not include the driver.

Emergency Brake System. A mechanism designed to stop a vehicle after a single failure occurs in the service brake system of a part designed to contain compressed air or brake fluid or vacuum (except failure of a common valve, manifold brake fluid housing or brake chamber housing).

Fifth Wheel. A device mounted on a truck tractor or similar towing vehicle (e.g., converter dolly) which interfaces with and couples to the upper coupler assembly of a semitrailer.

Fuel Tank Fitting. Any removable device affixed to an opening in the fuel tank with the exception of the filler cap.

Grommet. A device that serves as a support and protection to that which passes through it.

Hazard Warning Signal. Lamps that flash simultaneously to the front and rear, on both the right and left sides of a commercial motor vehicle, to indicate to an approaching driver the presence of a vehicular hazard.

Head Lamps. Lamps used to provide general illumination ahead of a motor vehicle.

Heater. Any device or assembly of devices or appliances used to heat the interior of any motor vehicle. This includes a catalytic heater which must meet the requirements of §177.834(1) of this title when flammable liquid or gas is transported.

Heavy Hauler Trailer. A trailer with one or more of the following characteristics:

(1) Its brake lines are designed to adapt to separation or extension of the vehicle frame; or

(2) Its body consists only of a platform whose primary cargo carrying surface is not more than 40 inches above the ground in an unloaded condition, except that it may include sides that are designed to be easily removable and a permanent "front end structure" as that term is used in Section 393.106 of this title.

Identification Lamps. Lamps used to identify certain types of commercial motor vehicles.

Lamp. A device used to produce artificial light.

Length of a manufactured home. The largest exterior length in the traveling mode, including any projections which contain interior space. Length does not include bay windows, roof projections, overhangs, or eaves under which there is no interior space, nor does it include drawbars, couplings or hitches.

License Plate Lamp. A lamp used to illuminate the license plate on the rear of a motor vehicle.

Low chassis vehicle. (1) A trailer or semitrailer manufactured on or after January 26, 1998, having a chassis which extends behind the rearmost point of the rearmost tires and which has a lower rear surface that meets the guard width, height, and rear surface requirements of Sec. 571.224 in effect on the date of manufacture, or a subsequent edition.

(2) A motor vehicle, not described by paragraph (1) of this definition, having a chassis which extends behind the rearmost point of the rearmost tires and which has a lower rear surface that meets the guard configuration requirements of Sec. 393.86(b)(1).

Manufactured home means a structure, transportable in one or more sections, which in the traveling mode, is eight body feet or more in width or forty body feet or more in length, or, when erected on site, is three hundred twenty or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air-conditioning, and electrical systems contained therein. Calculations used to determine the number of square feet in a structure will be based on the structure's exterior dimensions measured at the largest horizontal projections when erected on site. These dimensions will include all expandable rooms, cabinets, and other projections containing interior space, but do not include bay windows. This term includes all structures which meet the above requirements except the size requirements and with respect to which the manufacturer voluntarily files a certification pursuant to 24 CFR 3282.13 and complies with the standards set forth in 24 CFR part 3280.

Parking Brake System. A brake system used to hold a vehicle stationary.

Play. Any free movement of components.

Pulpwood Trailer. A trailer or semitrailer that is designed exclusively for harvesting logs or pulpwood and constructed with a skeletal frame with no means for attachment of a solid bed, body, or container.

Rear Extremity. The rearmost point on a motor vehicle that falls above a horizontal plane located 560 mm (22 inches) above the ground and below a horizontal plane located 1,900 mm (75 inches) above the ground when the motor vehicle is stopped on level ground; unloaded; its fuel tanks are full; the tires (and air suspension, if so equipped) are inflated in accordance with the manufacturer's recommendations; and the motor vehicle's cargo doors, tailgate, or other permanent structures are positioned as they normally are when the vehicle is in motion. Nonstructural protrusions such as taillamps, rubber bumpers, hinges and latches are excluded from the determination of the rearmost point.

Reflective Material. A material conforming to Federal Specification L S 300, "Sheeting and Tape, Reflective; Non exposed Lens, Adhesive Backing," (September 7, 1965) meeting the performance standard in either Table 1 or Table 1A of SAE Standard J594f, "Reflex Reflectors" (January, 1977).

Reflex Reflector. A device which is used on a vehicle to give an indication to an approaching driver by reflected light from the lamps on the approaching vehicle.

Saddle mount. A device, designed and constructed as to be readily demountable, used in driveway towaway operations to perform the functions of a conventional fifth wheel:

(1) **Upper half.** "Upper half" of a "saddle mount" means that part of the device which is securely attached to the towed vehicle and maintains a fixed position relative thereto, but does not include the "king pin;"

(2) **Lower half.** "Lower half" of a "saddle mount" means that part of the device which is securely attached to the towing vehicle and maintains a fixed position relative thereto but does not include the "king pin;" and

(3) **King pin.** "King pin" means that device which is used to connect the "upper half" to the "lower half" in such manner as to permit relative movement in a horizontal plane between the towed and towing vehicles.

Service Brake System. A primary brake system used for slowing and stopping a vehicle.

Side Extremity. The outermost point on a side of the motor vehicle that is above a horizontal plane located 560 mm (22 inches) above the ground, below a horizontal plane located 1,900 mm (75 inches) above the ground, and between a transverse vertical plane tangent to the rear extremity of the vehicle and a transverse vertical plane located 305 mm (12 inches) forward of that plane when the vehicle is unloaded; its fuel tanks are full; and the tires (and air suspension, if so equipped) are inflated in accordance with the manufacturer's recommendations. Non-structural protrusions such as taillights, hinges and latches are excluded from the determination of the outermost point.

Side Marker Lamp (Intermediate). A lamp shown to the side of a trailer to indicate the approximate middle of a trailer 30 feet or more in length.

Side Marker Lamps. Lamps used on each side of a trailer to indicate its overall length.

Special purpose vehicle. (1) A trailer or semitrailer manufactured on or after January 26, 1998, having work-performing equipment that, while the motor vehicle is in transit, resides in or moves through the area that could be occupied by the horizontal member of the rear impact guard, as defined by the guard width, height and rear surface requirements of Sec. 571.224 (paragraphs S5.1.1 through S5.1.3), in effect on the date of manufacture, or a subsequent edition.

(2) A motor vehicle, not described by paragraph (1) of this definition, having work-performing equipment that, while the motor vehicle is in transit, resides in or moves through the area that could be occupied by the horizontal member of the rear impact guard, as defined by the guard width, height and rear surface requirements of Sec. 393.86(b)(1).

Steering Wheel Lash. The condition in which the steering wheel may be turned through some part of a revolution without associated movement of the front wheels.

Stop Lamps. Lamps shown to the rear of a motor vehicle to indicate that the service brake system is engaged.

Tail Lamps. Lamps used to designate the rear of a motor vehicle.

Turn Signals. Lamps used to indicate a change in direction by emitting a flashing light on the side of a motor vehicle towards which a turn will be made.

Upper Coupler Assembly. A structure consisting of an upper coupler plate, king pin and supporting framework which interfaces with and couples to a fifth wheel.

Upper Coupler Plate. A plate structure through which the king pin neck and collar extend. The bottom surface of the plate contacts the fifth wheel when coupled.

Wheels back vehicle. (1) A trailer or semitrailer manufactured on or after January 26, 1998, whose rearmost axle is permanently fixed and is located such that the rearmost surface of the tires (of the size recommended by the vehicle manufacturer for the rear axle) is not more than 305 mm (12 inches) forward of the transverse vertical plane tangent to the rear extremity of the vehicle.

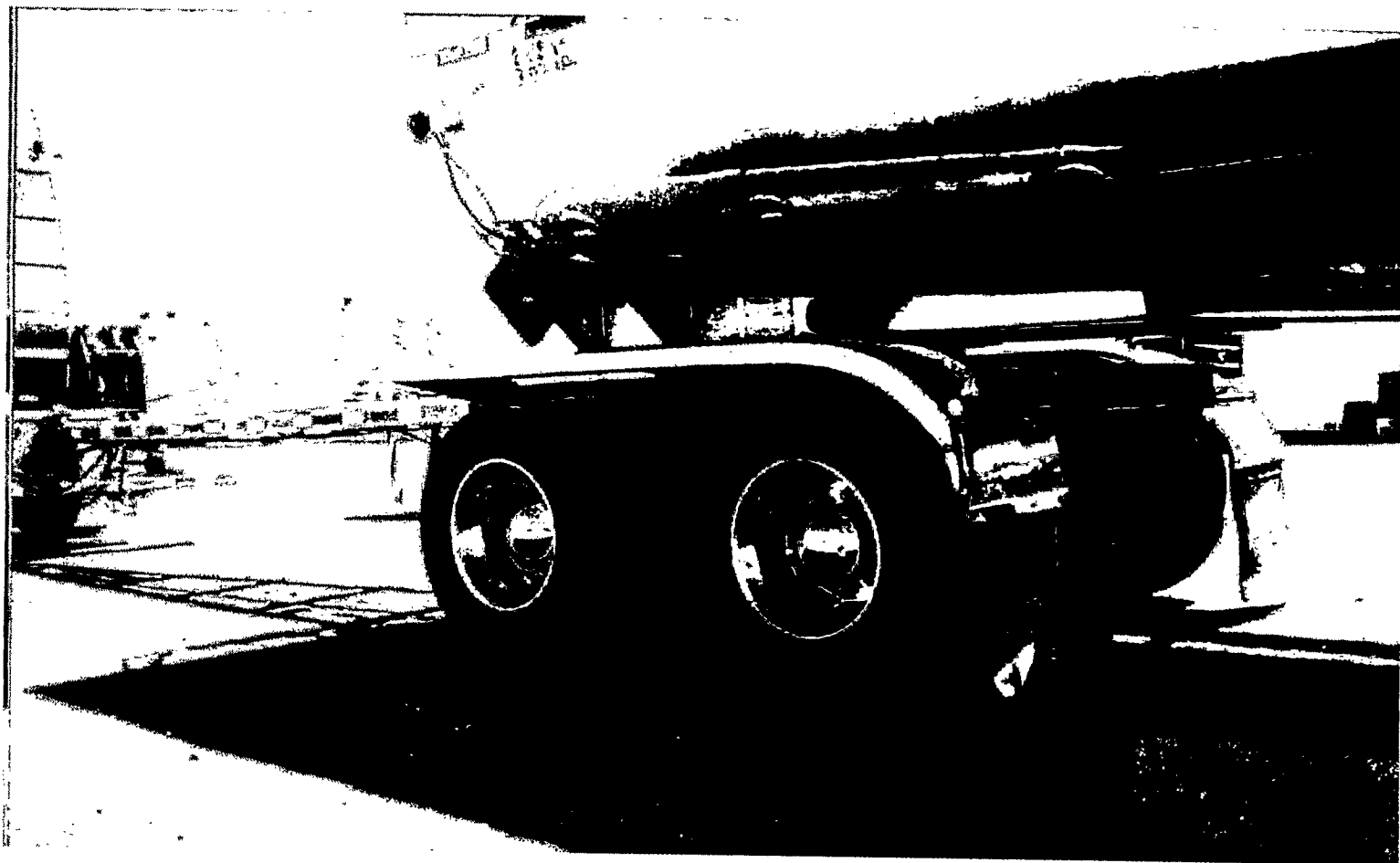
(2) A motor vehicle, not described by paragraph (1) of this definition, whose rearmost axle is permanently fixed and is located such that the rearmost surface of the tires (of the size recommended by the vehicle manufacturer for the rear axle) is not more than 610 mm (24 inches) forward of the transverse vertical plane tangent to the rear extremity of the vehicle.

Width of a manufactured home. The largest exterior width in the traveling mode, including any projections which contain interior space. Width does not include bay windows, roof projections, overhangs, or eaves under which there is no interior space.

[53 FR 49384, Dec. 7, 1988 as amended at 63 FR 8339, Feb. 18, 1998; 63 FR 24465, May 4, 1998; 64 FR 47707, Sept. 1, 1999]



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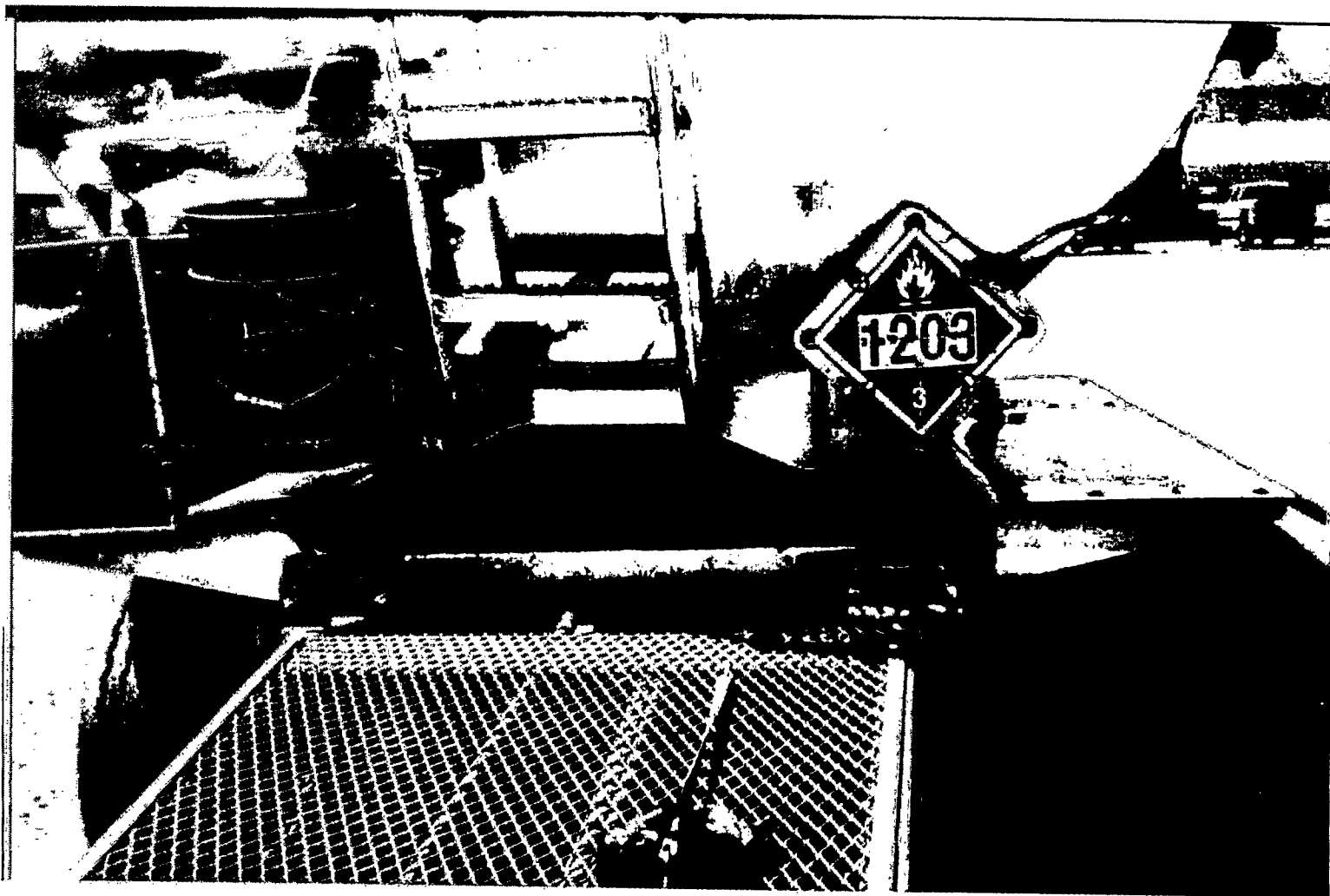


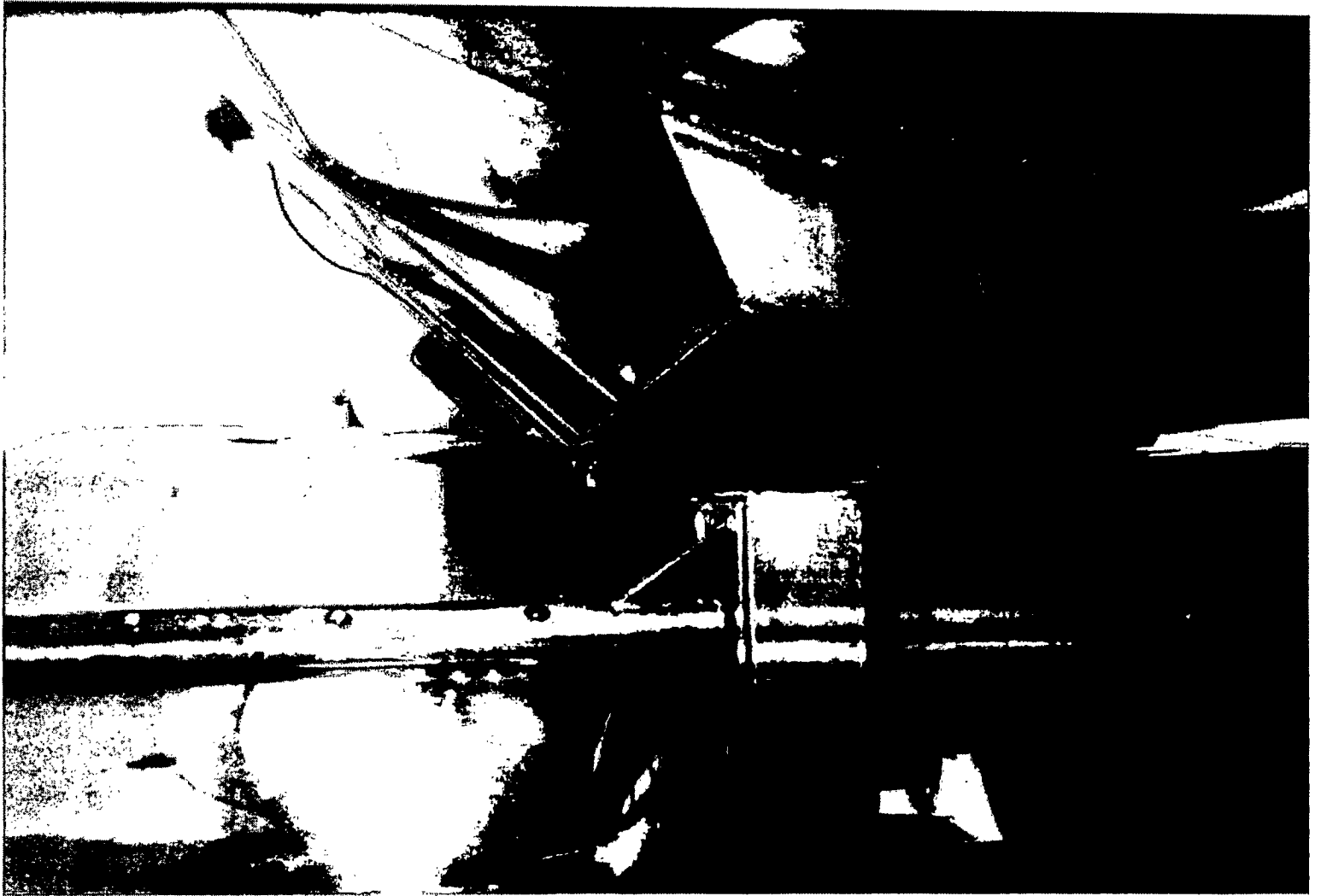
Del,

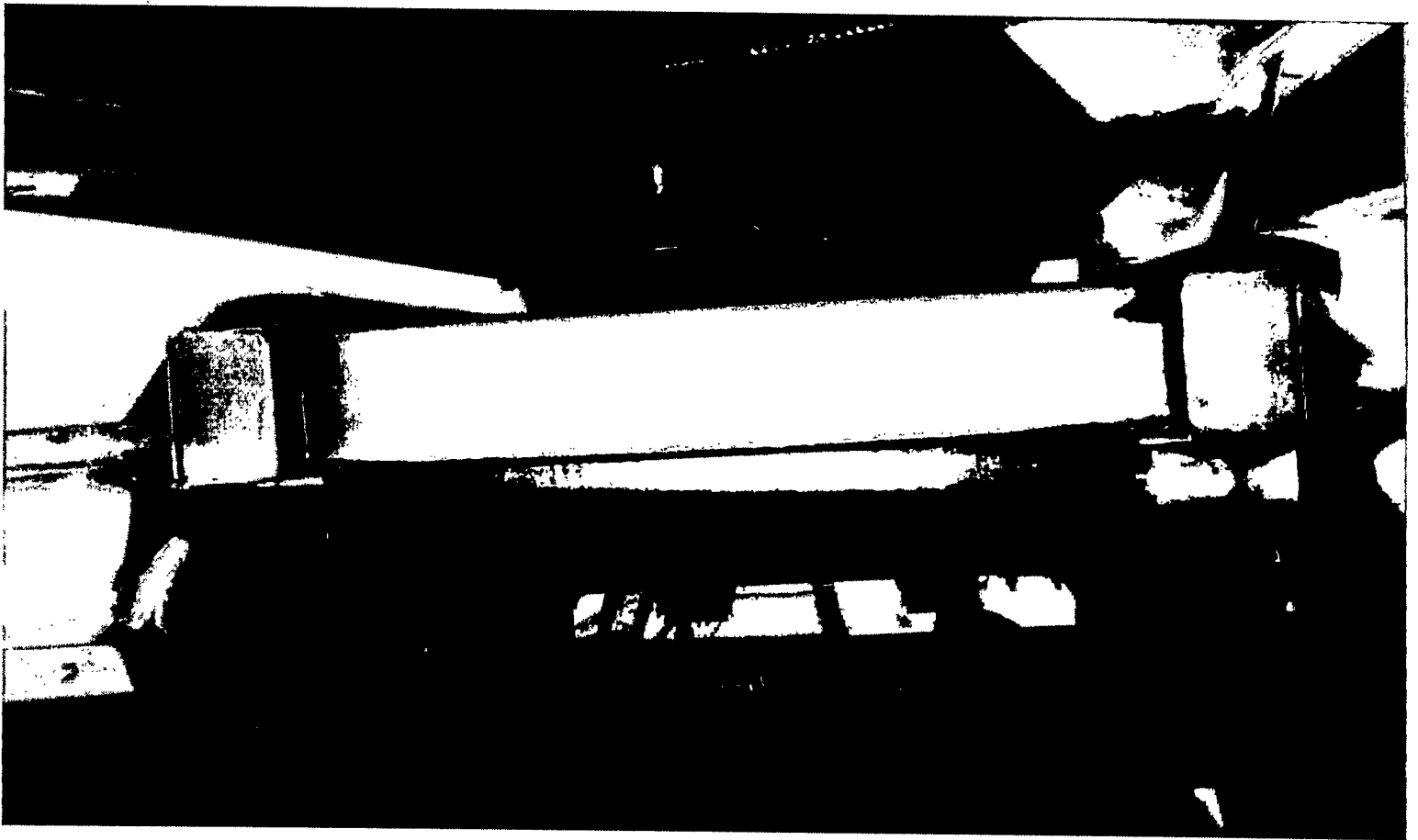
The letter
from Tom
seems to
be clear.

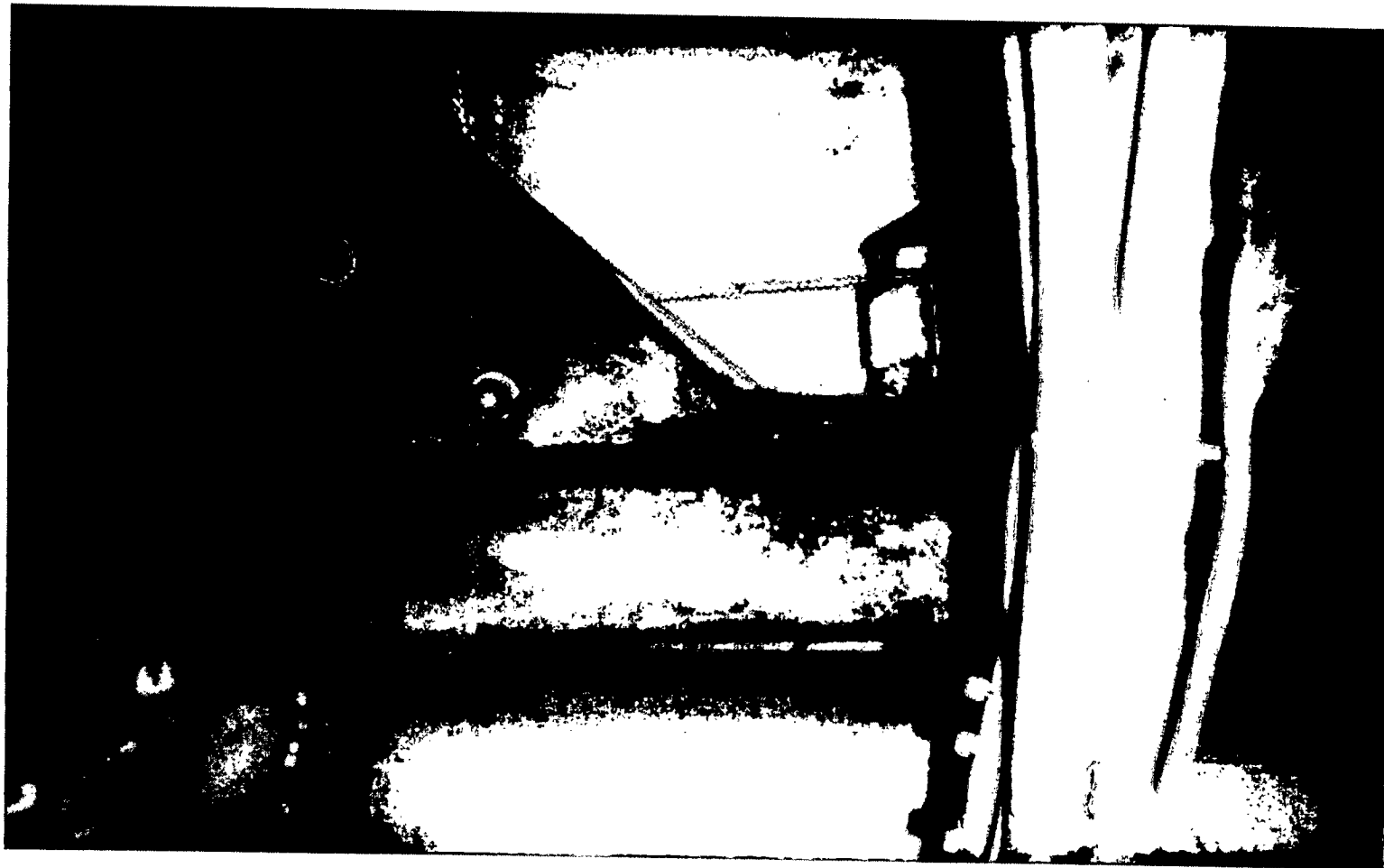
Corrosion could
still form between
the tank and the
turntable.

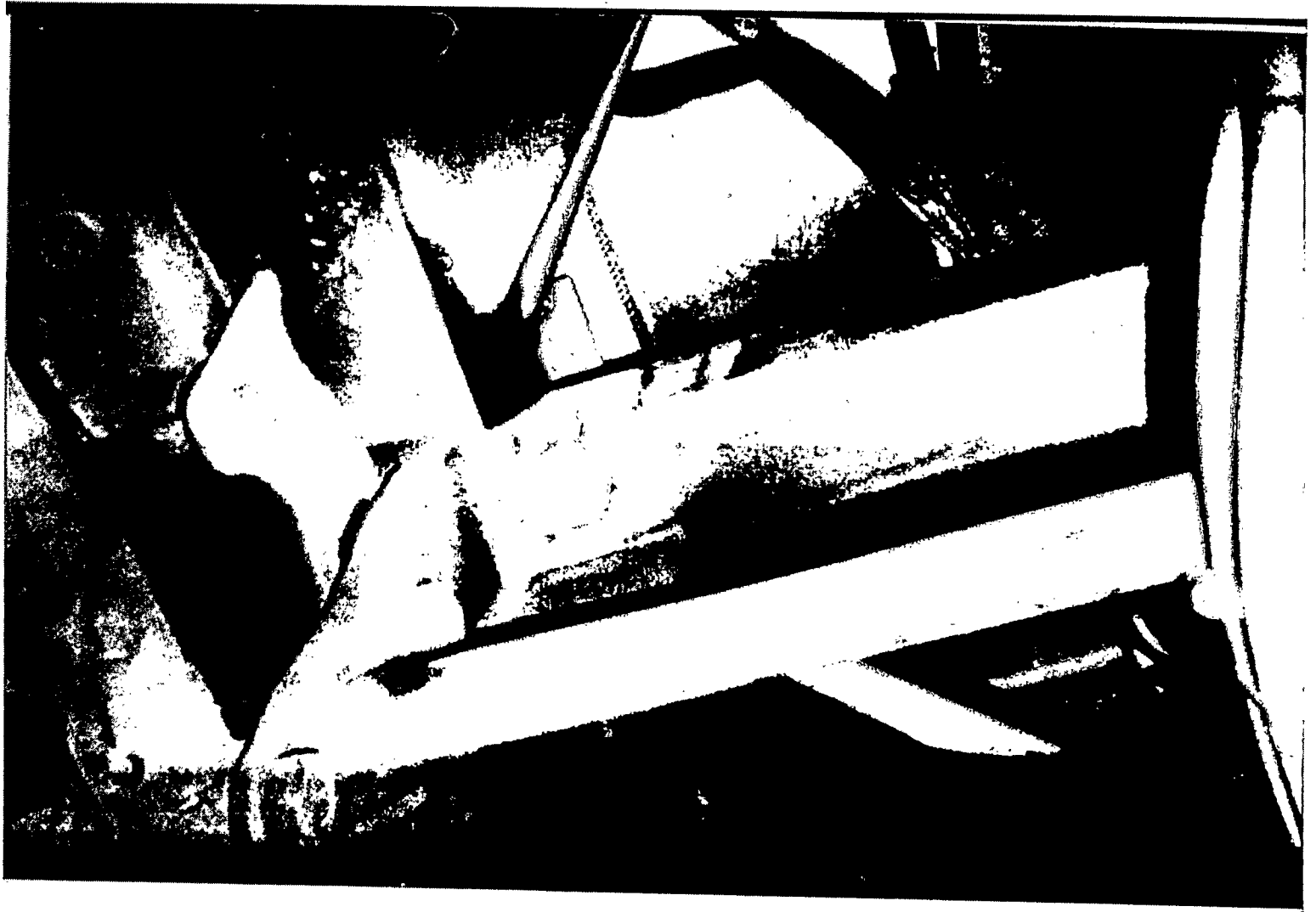






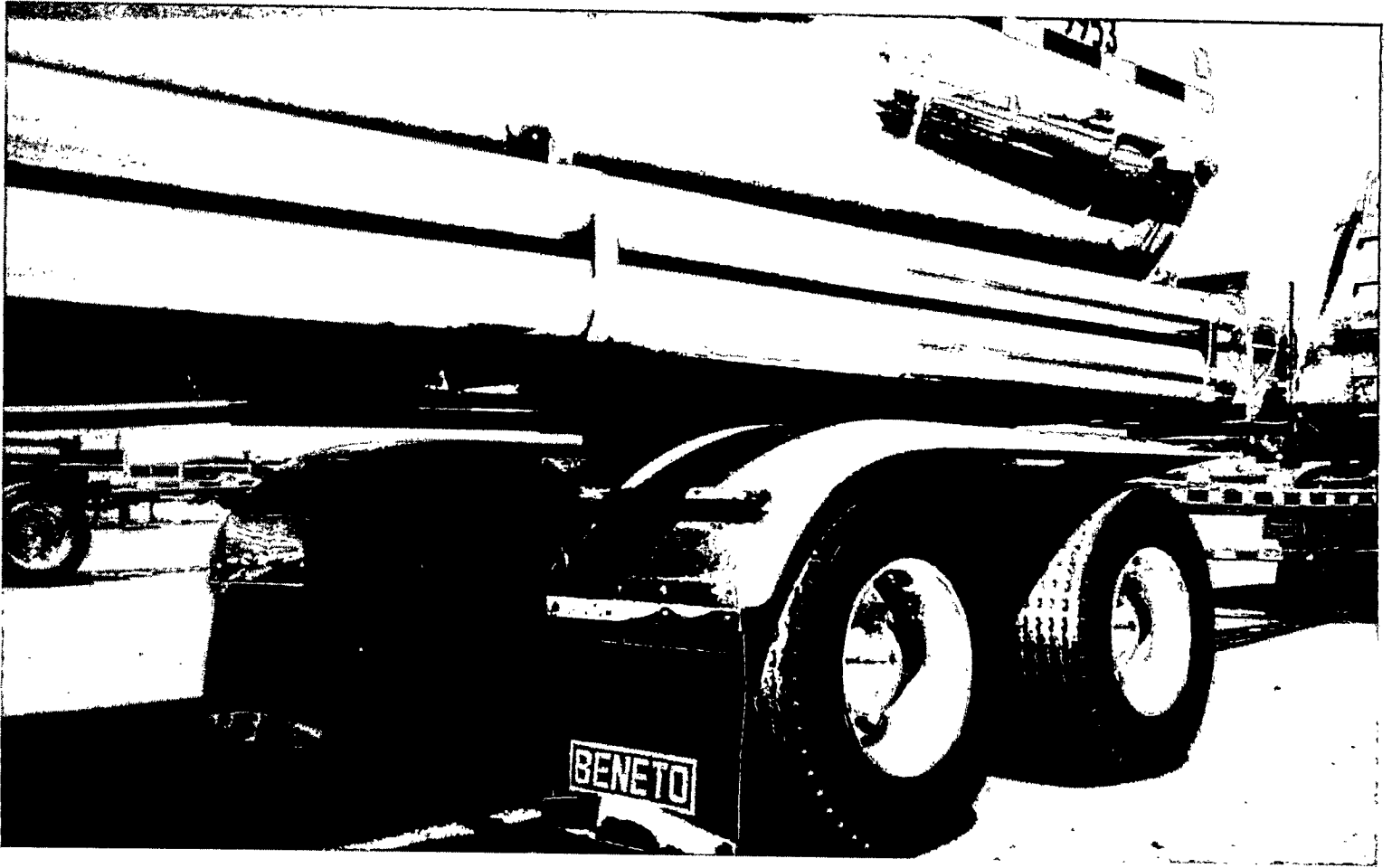


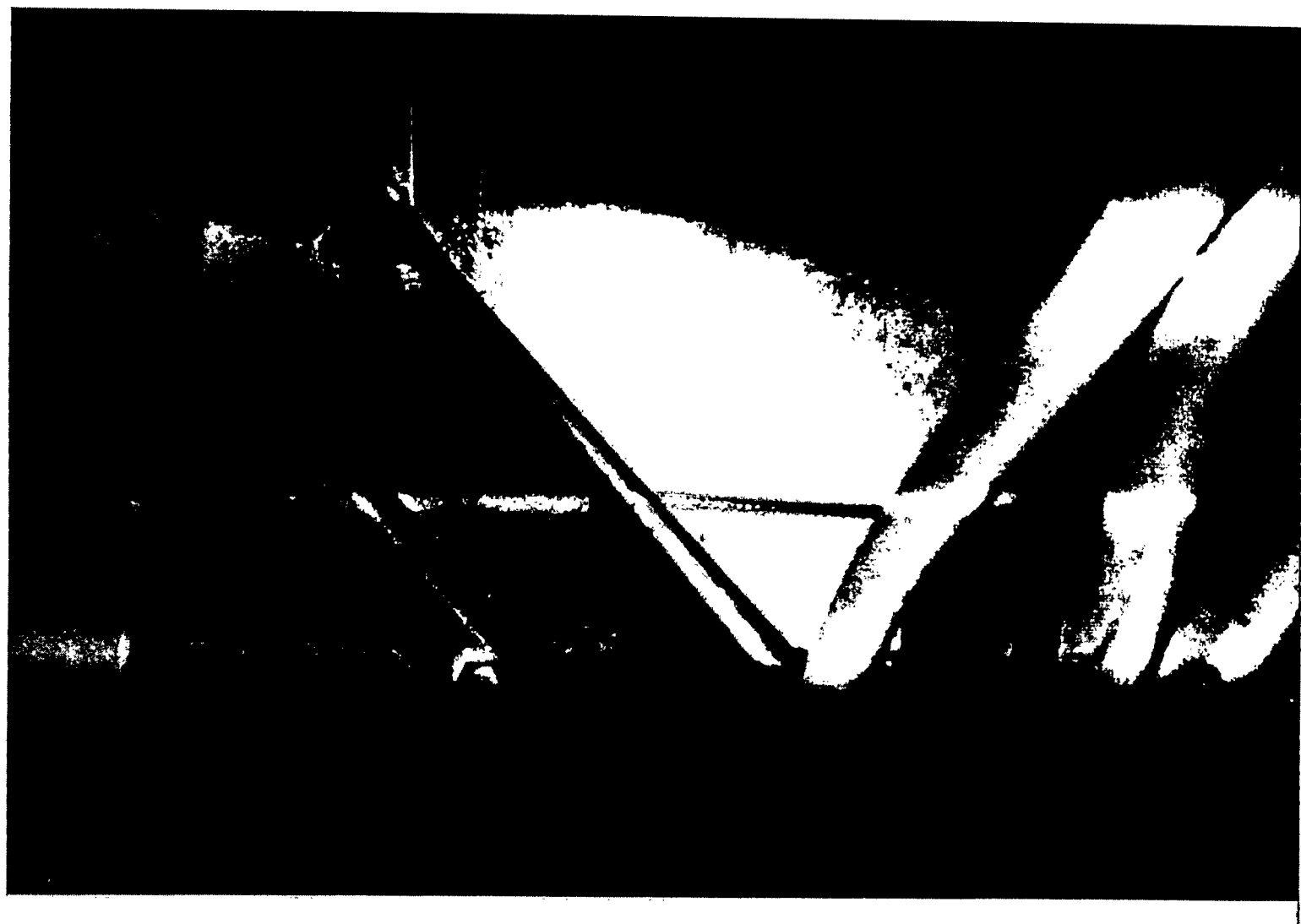


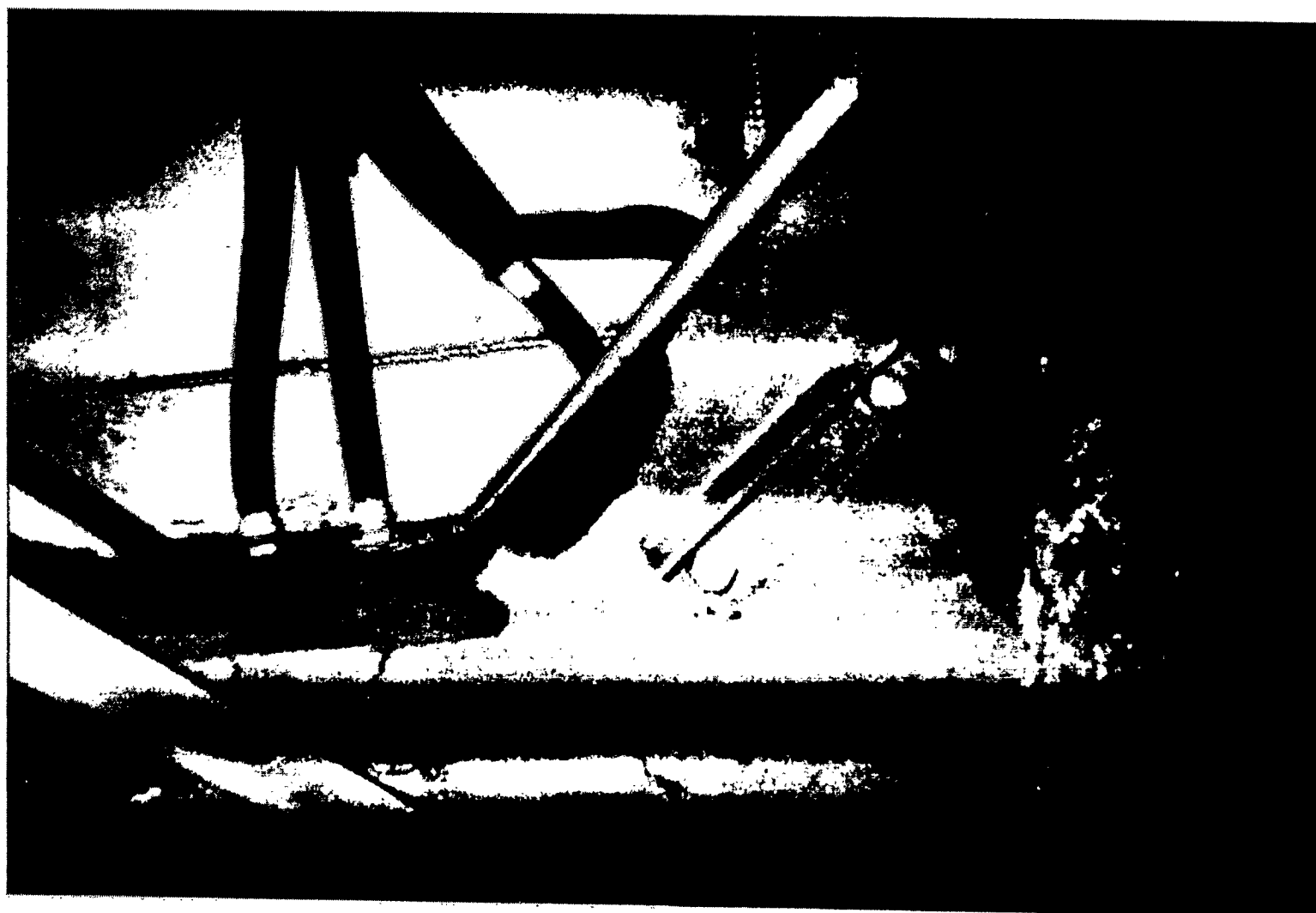


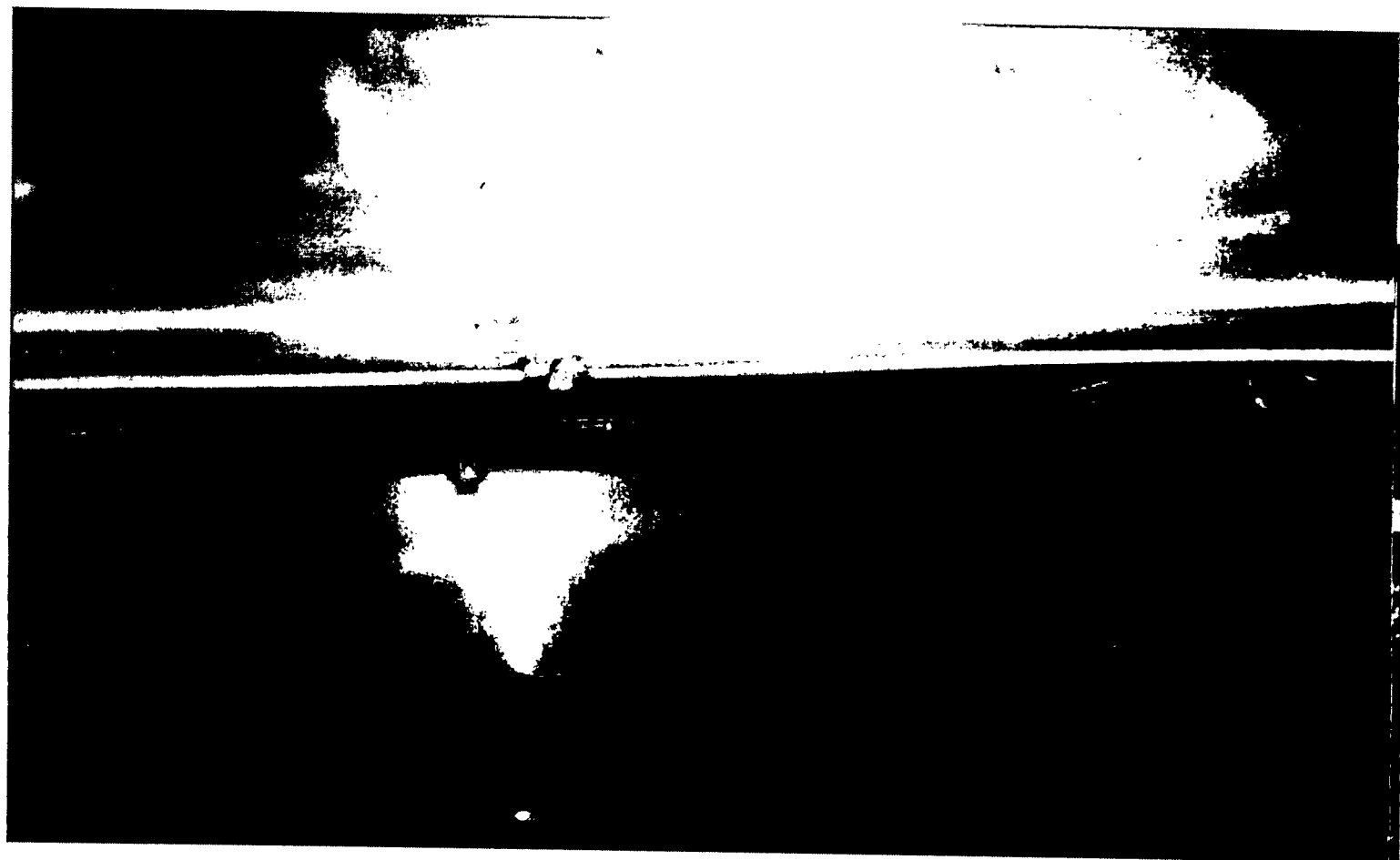


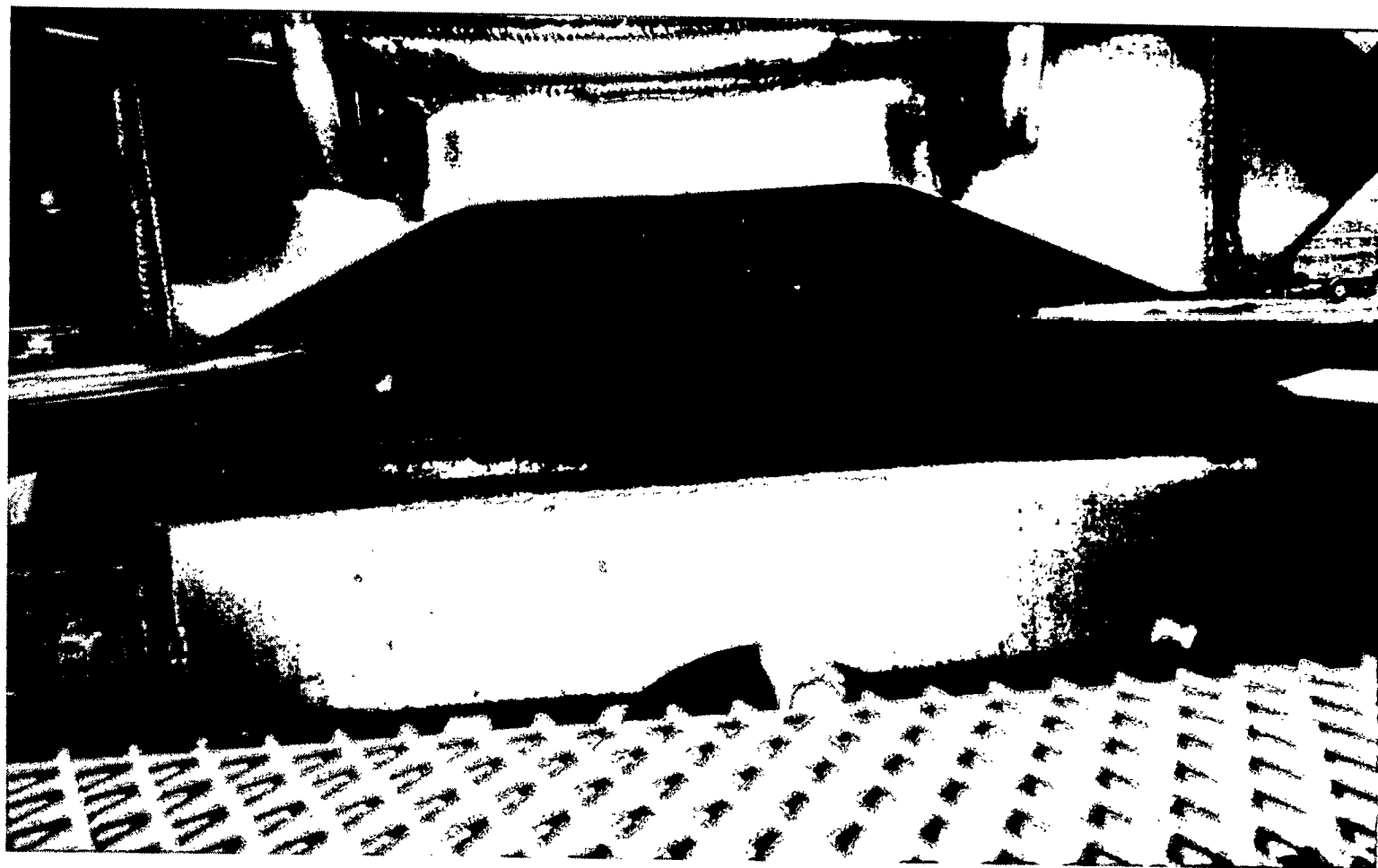


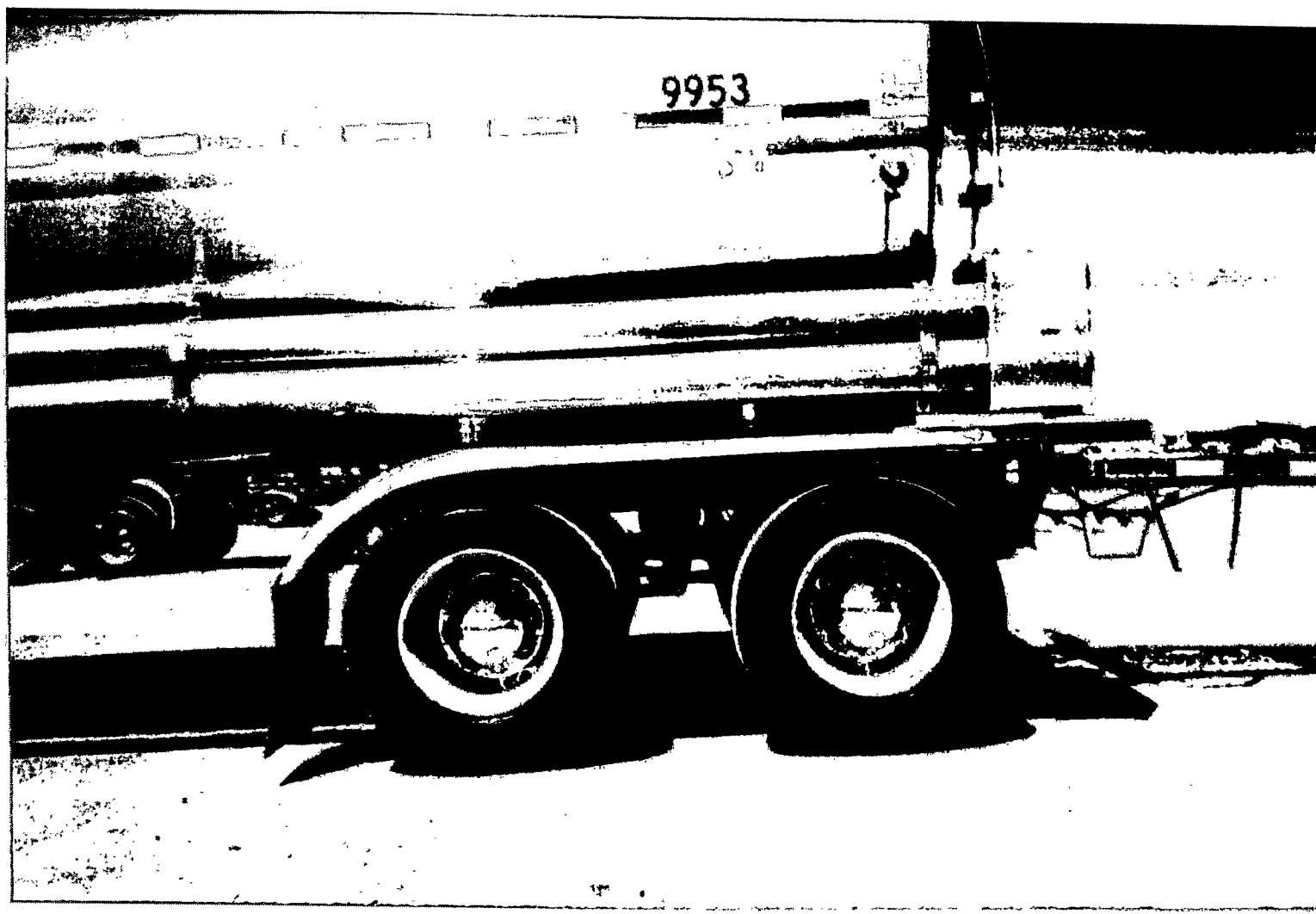






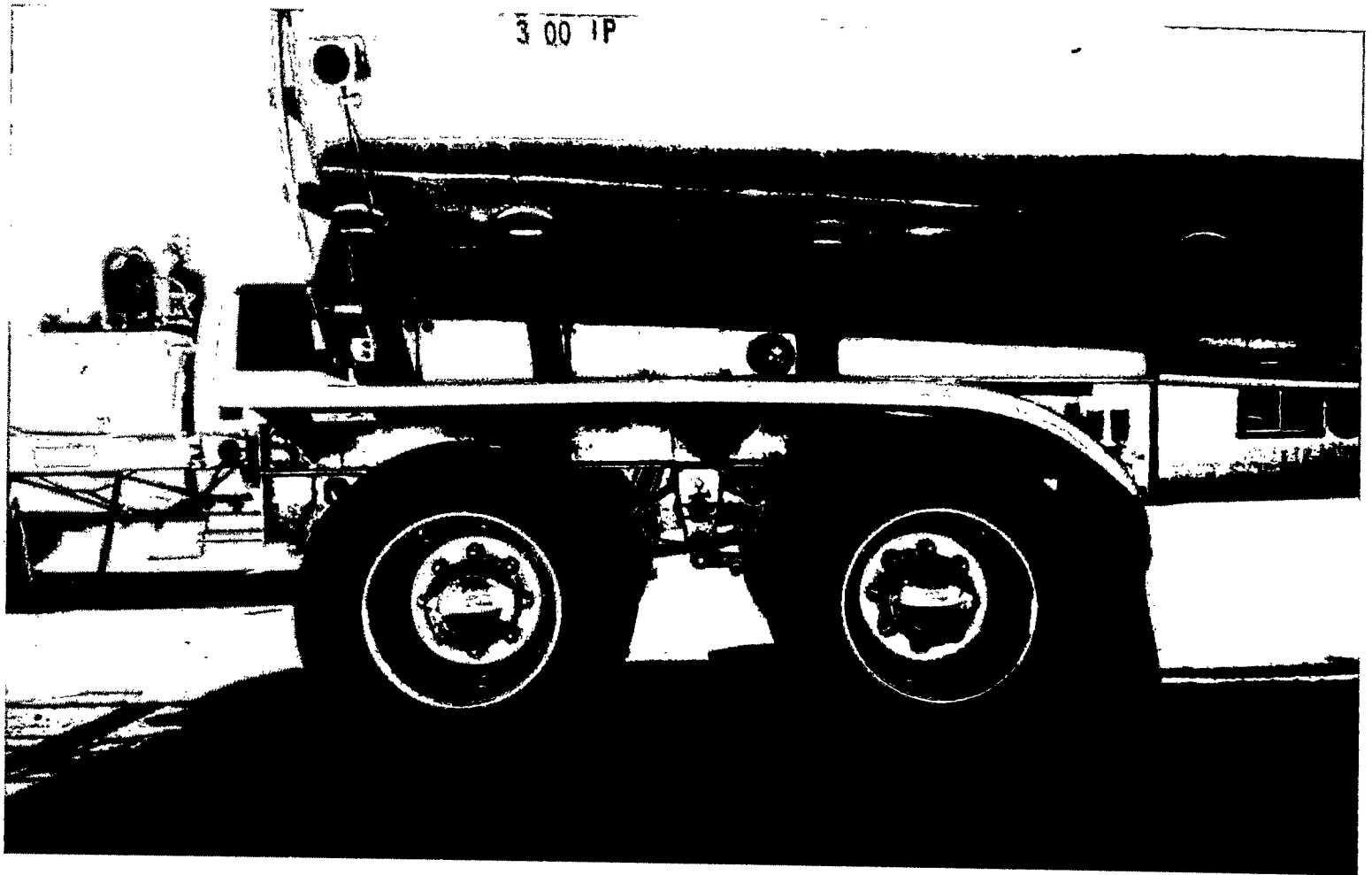


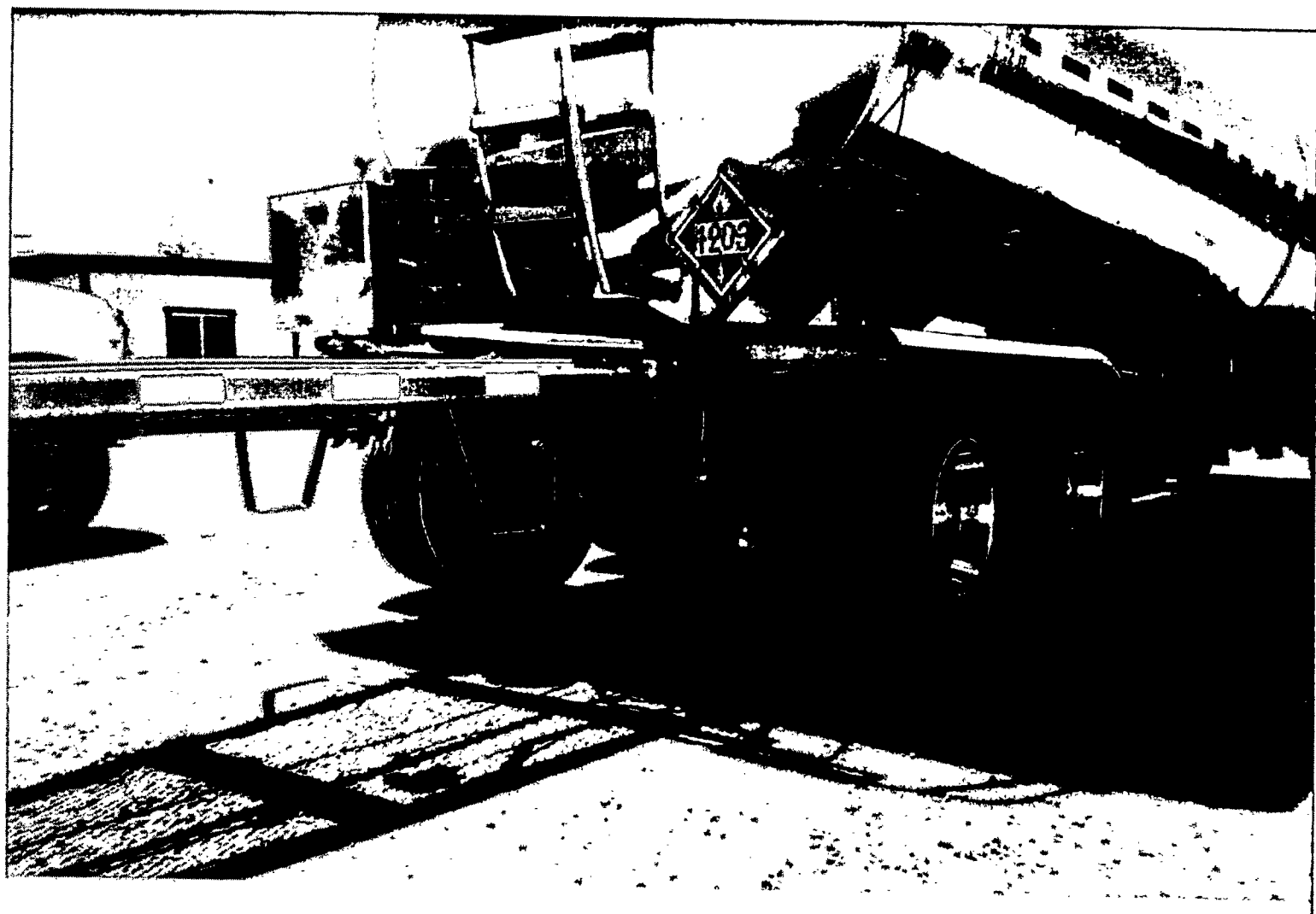














Billings, Delmer

From: Danny Shelton [dan_shelton@mindspring.dot.gov]
Sent: Monday, November 11, 2002 8:25 AM
To: Delmer Billings; Daniel G. Shelton
Subject: Additional photographs



Turntable 21.jpg



Turntable 22.jpg



Turntable 23.jpg



Turntable 24.jpg



Turntable 25.jpg



Turntable 26.jpg



Turntable 27.jpg



Turntable 28.jpg



Turntable 29.jpg



Turntable 30.jpg



Turntable 31.jpg



Turntable 32.jpg



Turntable 33.jpg



Turntable 34.jpg

Del, these are photos taken by Ray Schaffer of a full trailer using a turntable. The other pictures were taken of a Super Tanker setup using a turntable.

Thanks

